

Listing of Claims:

1. (Previously Presented) A method for determining the degree of loading of a waterproofing agent within a planar carbon substrate for use in an electrochemical fuel cell, comprising the steps of:

measuring the transmittance of light through the carbon substrate when in an unloaded state;

measuring the transmittance of light through the carbon substrate when in a loaded state; and

comparing the difference in transmittance from the unloaded state to the loaded state and therefrom determining the degree of loading of the waterproofing agent within the carbon substrate,

wherein the carbon substrate is dark in color.

2. (Original) The method of claim 1 wherein the carbon substrate is a carbon fiber paper.

3. (Original) The method of claim 1 wherein the carbon substrate is a carbon cloth.

4. (Original) The method of claim 1 wherein the carbon substrate is a continuous web impregnated with an electrically conductive filler.

5. (Original) The method of claim 1 wherein the waterproofing agent is polytetrafluoroethylene.

6. (Original) The method of claim 1 wherein the waterproofing agent is selected from the group consisting of polyethylene, polypropylene and ethylene-propylene copolymer.

7. (Original) The method of claim 1 wherein the degree of loading of the waterproofing agent within the carbon substrate when in the loaded state ranges from 1% to 50% by weight.

8. (Original) The method of claim 1 wherein the degree of loading of the waterproofing agent within the carbon substrate when in the loaded state ranges from 4% to 30% by weight.

9. (Original) The method of claim 1 wherein transmittance is measured at 4000 to 7000 Å.

10. (Original) The method of claim 1 wherein light is provided by a light source selected from the group consisting of halogen, tungsten, fluorescent and UV lamps.

11. (Original) The method of claim 1 wherein the carbon substrate has a thickness of less than 0.5 mm.